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Dr. *B L O N D E T*'s

DISSERTATION

ON THE

Epidemical Distemper

AMONG THE

HORN'D CATTLE.

[Price One Shilling.]



N^o. 5.

A
DISSERTATION
ON THE
Epidemical Distemper
AMONG THE
HORN'D CATTLE:

WHEREIN,

After giving a short HISTORY of the
ORIGIN, PROGRESS, and NATURE
of that DISTEMPER,

The most PROPER MANNER of treating it
is laid down, according to the Principles of
PHYSICK and NATURAL PHILOSOPHY.

By M. BLONDET,

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one of the KING'S PHYSICIANS in Ordinary,
Intendant of the Mineral Waters of *Segrai*,
and Member of the Society of *Belles Lettres* of *Orleans*.

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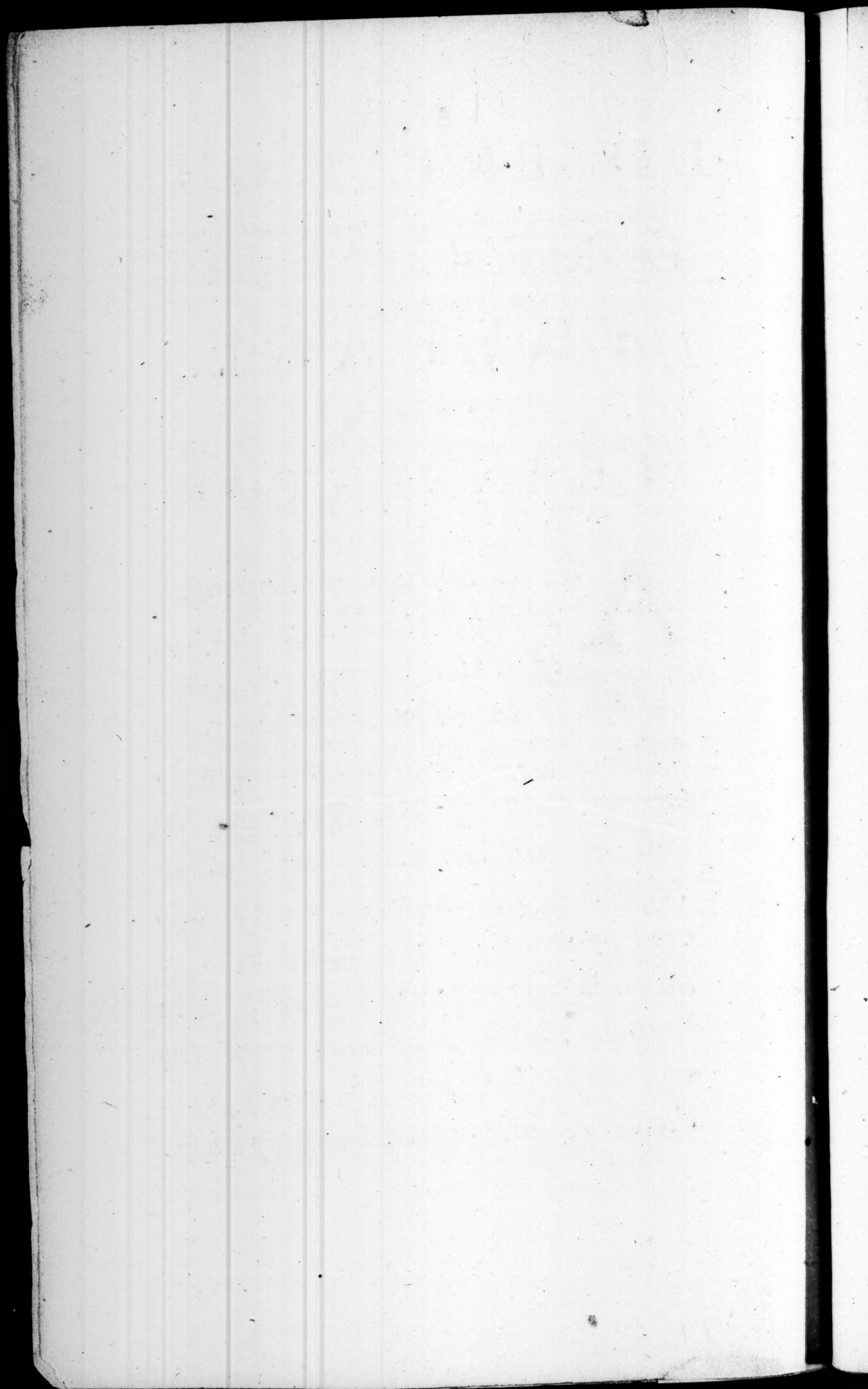
*Tenenda nobis hæc via est, quam Natura præscripsit,
nec ab illa declinandum: Illam sequentibus omnia
facilia & expedita sunt; contra illam nitentibus non
alia via est quam contra aquam remigantibus.*

SENEC. Epist. 122.

L O N D O N,

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MDCCLI.



P R E F A C E,
BY THE
T R A N S L A T O R.

A*S the contagious Distemper amongst the Horned Cattle, of which Europe in general has of late Years felt the fatal Effects, still continues to rage in several Parts of this Kingdom, as well as in Denmark and other neighbouring Countries, no Apology need be made for the Publication of this Treatise on that Subject. The French Author, affected with the miserable Condition to which some Parts of his native Country were reduced*

reduced by the Contagion, applied himself, like a good Physician, to find out the most probable Means of putting a Stop to its Progress. In order to this, he has thoroughly consider'd the various Symptoms of the Distemper, has closely attended to the Efforts of Nature in its different Stages, and from thence has drawn such Inferences as seem undeniable, having all along made the Principles of Natural Philosophy the Basis of his Reasoning.

What Reception the Author's Proposal met with in France, or whether it was ever put in Execution, the Translator has not been able to learn; but this he hopes he may be allow'd to say, that the Scheme appears exceeding plausible, and well deserves the Attention of every benevolent and publick-spirited Person,

Person, and especially of those of the Faculty, to whose Province it more peculiarly belongs: And this is likewise the Opinion of an eminent English Surgeon, who has perused the following Pages.

It is indeed a melancholy Consideration, that amongst all the various Methods of treating this Distemper, that have hitherto been proposed by the Learned, no Expedient has yet been found to put an End to the Calamity. If then there be any Probability of our Author's Scheme being productive of the desired Effect, it will sufficiently justify our offering it to the Publick in an English Dress, without which it would not be of such general Service. The Farmer, the Grazier, or any Owner of Cattle, may now read and judge for himself: But it
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is to be hoped that our Physicians in particular (as was hinted before) will not think it unworthy their Regard, but either give a Sanction to the Author's Proposal by their publick Approbation of it, or else point out some more effectual Remedy for the Distemper in question.

— Si quid novisti rectius istis,
Candidus imperti; si non, his utere mecum.

HOR.

S. I.

A DIS-

A
DISSERTATION
ON THE
Epidemical Distemper
AMONG THE
HORNED CATTLE, &c.

CONTAGIOUS Diseases have always been look'd upon as a certain Stumbling-block in the Physician's Way, which his Art is at a loss to remove. Such a prodigious Variety of Symptoms, such strange and unexpected Effects, are observable in Distempers of that Kind, that they are justly deem'd a Scourge of the Almighty, which serves at the same time as a Punishment where it falls, and as a Lesson of Humility to Mankind.

B

WE

WE felt the fatal Effects of this Rod at the Beginning of the present Century, in the Distemper among the Cattle, with which the most flourishing Provinces of *France* have been afflicted.* We saw the Desolation it spread in different Parts of the Country, the poor Remains that escap'd its Fury, and were Witnesses of the Consternation of the miserable People, some overwhelm'd with the Losses they had already sustain'd, and others terrified with the Prospect of those wherewith they were threaten'd.

* This Distemper first appear'd in the *Venetian* Territories in the Year 1711, occasion'd by a Beast which some Graziers of *Dalmatia* had left upon the Road near *Padua*. The Persons who found this Beast put it into a Cow-house, where it soon died, and so infected the House, that all the Cattle kept there, both Cows and Oxen, were destroy'd. The Contagion spread itself in the neighbouring Country with great Rapidity; it entirely ravaged the *Milanese*, and *Piedmont* underwent the same Fate; in which Principality there died, in the Year 1714 only, no less than Seventy Thousand Head of Cattle. Nor did *France* escape without its Share of this Calamity; for in the Year 1715 the Province of *Dauphiny*, the *Lionnois*, *Burgundy*, the *Orleannois*, and *Alsace*, all equally felt its fatal Effects. See the *Reflections of the Physicians of Geneva upon this Distemper*.

AFTER

AFTER having been long Spectators of all these Calamities, the Rage of the Distemper gradually abated, till at last it entirely ceased, and put an End to the Tears and the Distress it had occasioned. As a considerable Time pass'd without any Appearance of its Return, we thought ourselves perfectly deliver'd from the Calamity, and Joy and Hope had succeeded our Grief and terrible Apprehensions; when on a sudden, like a *Hydra*, reviving with new Strength when we thought it destroy'd, the Contagion broke out again, and has raged for some Years past in the several Provinces of this Kingdom. Thus we see the same Torrent of Miseries again pouring in upon us, which we have every Day Cause to lament, not so much on account of what we actually suffer at present, as from an Apprehension that we may yet feel its fatal Effects in as dreadful a Manner as some of our Neighbours.*

* This Contagion also spread into *England*, where it made great Havock, destroying most of the Cattle about the Towns and Villages which it visited; *Holland* was at least an equal Sufferer by it, the Distemper having carried off above Two Hundred Thousand Head of Cattle in that Country.

WHAT an affecting Sight, in reality, is the Loss of an Animal so useful in the Business of Agriculture, and so necessary for the Support of such a vast Number of Families !

TELL us, ye unfortunate Provinces, how much you have suffer'd by the Ravages of this Contagion ; give us a Detail of your Miseries ; let us know to what a Condition it has reduced you. Or rather, say not a Word upon that Head : Your Pastures desolate, your Lands uncultivated, your Farms abandon'd, sufficiently declare your Distress.

THE Attempts of some Physicians to give us a clear Idea of this Distemper, and to point out the proper Method of treating it, have hitherto proved fruitless. Their Endeavours have not had the desired Effect, and their Discoveries have not yet been able to deliver us from this Calamity.

AMONGST those who have enquired into the Cause of the Distemper, some have ascribed it to the Intemperature of the Seasons, to a Defect of Perspiration, or to some noxious Quality in the Pastures :
Others

Others to the Air's being impregnated with pestilential Corpuscles, which getting into the Blood, either by the way of Respiration, or taken in with the Food, there produce the dismal Effects we observe.

THE celebrated *Valisnieri*, an *Italian* Physician, endeavours to reduce this Disease to a System he has laid down, that many Distempers are produced by Worms. He supposes, (and the Supposition is ingenious enough) that the present Distemper among the Cattle is occasion'd by a Multitude of little Worms, which insinuate themselves into the Bodies of those Animals; and that the fatal Consequences, which follow thereupon, are not so much owing to the Havock these Strangers are able to make, as to the Hostilities that ensue between them and the small Worms usually residing in the Bodies of the Cattle, who perceiving a Legion of Enemies coming against them, take up Arms to defend their Habitations and repulse the Invaders. Each settled Inhabitant of the Animal attacks a Worm that comes to dispossess him; and the Result of such an Engagement is the Loss of the Field of Battle,

Battle, which draws after it the Destruction of the Victors as well as the Vanquish'd*.

OTHERS have attributed the Cause of this Disease to the Conjunction of certain Stars, which are able (say they) by a Mixture of their Influences, *to communicate to the Air a certain Corruption, and a malignant Quality, particularly opposite to the Constitution of these distemper'd Cattle.* The bare Mention of this Opinion sufficiently shews its Ridiculousness; and a Sentiment so absurd, not founded on any solid Principle, and overthrown by constant Experience, has no need of Confutation.

IN a Word, every one has form'd a System according to his Fancy: One will have it, that the Fluids of the Animal are loaded with an alkaline Salt, another says it is an Acid; this supposes them to be dissolved, another coagulated: And all make use of different Remedies, according to the Prejudices they have entertain'd.

* M. Logrossi, a Physician, first proposed this Hypothesis to M. Valisnieri, who approved of and enlarged it, as it is here represented.

Others,

Others*, without giving themselves the Trouble to find out the Cause of the Distemper, and to consider its Nature and Symptoms, have made *a choice Collection* of Remedies which a blind Practice has introduced, and which some happy Chance has render'd successful; imagining that any fantastical Medicine, the Use of which is by no means warranted, must always succeed because it has once succeeded; whereas its Success ought to be ascribed to an Effort of Nature, which has surmounted both the Disease and the unnatural Prescription.

It would be endless to repeat the various Sentiments of Authors who have employ'd their Pens on this Subject, and the various Methods they have propos'd of treating this Distemper. We find by unhappy Experience, that none of the Remedies yet prescribed have had the desired Success, which sufficiently manifests their Uselessness, and at once refutes the most ingenious Hypotheses that have been form'd concerning it.

* The Empiricks.

I DARE not flatter myself with Hopes of better Success in an Attempt, wherein so many learned Men have miscarried, *probè sciens quid valeant humeri, quid ferre recusent.* The Desire, however, which every good Member of Society ought to have, of being serviceable to his Country, is a Motive sufficient to induce me to propose my Sentiments on this Subject, as I am persuaded that any thing of publick Concern is not unworthy a Physician's Researches.

*A DESCRIPTION of the DISTEMPER
among the CATTLE.*

THE Beasts attack'd with this Distemper do not chew the Cud; they are dull, heavy, dejected, and stiff; they hang down their Head and their Ears, their Hair is rough and staring, and their Eyes run with Water. Their Horns and Ears are cold, they are seized with a general Trembling, their Legs bend under them, a Fever comes on*, the Roots of their Horns

* Though the Symptoms which usually accompany a Fever do not appear among the Cattle till such
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grow warm, their Milk is dried up, their Breath is hot; their Respiration is short, quick, interrupted, often accompanied with a violent Cough, and a considerable Beating of the Flank; their Skin is puff'd up, and becomes like Shagreen. With these Symptoms is frequently join'd a Discharge of Matter, sometimes greenish, sometimes bloody, and always very fetid. They also throw out abundance of slimy Matter from their Mouth and Nostrils, and a purulent Liquor runs from their Eyes. Their Tongue is always black or livid, the Outside of their Nostrils is very hot, the Inside dry and overspread with little red Vesicles with a blue Circle round them; and the Roof and Inside of their Mouth, which is dry and parch'd, is likewise cover'd with Vesicles of the same Kind.

Time as there is no Room to doubt of the Distemper, yet the Fever only becomes more apparent by Degrees, it being actually previous to all the Symptoms above-mention'd, and the very Beginning of this fatal Tragedy. A Person will be readily convinced of the Truth of what we advance, by putting his Finger upon the Artery of a Beast, even some Days before the Distemper plainly discovers itself; for he will find the Pulse beat quicker than usual, in which increased Velocity of the Blood a Fever consists.

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Nor

Nor is it an uncommon Thing for Tumours* to rise in some Places, which sometimes with a surprizing Rapidity reach the noble Parts, and occasion the Death of the Beast in less than an Hour's time. To all the foremention'd Symptoms of this Distemper the principal one is to be added, *viz.* its being contagious; for it is communicated by means of Men or Animals that have been amongst infected Cattle; and even without any apparent Communication it spreads itself to Places at a great Distance from each other †.

THOUGH it be perfectly indifferent what Name we give this Distemper, provided it be attended with the Symptoms just de-

* *M. Herment*, a Physician, observes, That these Tumours never produce their Effects so speedily, as when they are about the Chest or Head of the Animal.

† This is confirm'd by what *M. Valisnieri* writes to *M. Lancisi*, *viz.* That Dogs have carried this Distemper from one Country to another: And *M. Boromée* relates, that a Peasant who had been in a Cowhouse where the Beasts were infected, going afterwards into another that was free from the Sickness, immediately spread the Contagion among the found Cattle. We might here add many Observations to support our Assertion, if daily Experience did not furnish us with too evident Proofs of its Truth, a Detail whereof would be tedious.

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[II]

scribed; yet the Physicians who have handled this Subject are not agreed with respect to its Denomination. Some will have it to be a simple inflammatory Fever and others (of which Number is M. *Nigrisoli*) affirm it to be a burning and malignant one. Messieurs *Lancisi*, *Valisnieri*, and *Logrossi*, carry the Matter farther, and say it is a real Plague, peculiar to the Horned Cattle. And lastly, Messieurs *Ramazini*, *Herment*, and *Drouin*, look upon it as a Small Pox with the Purples.

THE numerous Train of Symptoms, that accompany the Distemper we are speaking of, has given Rise to this Multiplicity of Opinions. Every one has discover'd such Symptoms as were necessary to characterise the Distemper according to his Fancy, and has made use of them to establish his own Sentiment, without attending to those which would destroy what he advanced. It cannot be denied, for Instance, that this Distemper is attended with the Symptoms of an inflammatory Fever, as some have term'd it; of which the short and quick Respiration, the burning Breath, the Panting of the Flank, the

Pulse stronger and quicker than usual, and the Blood found in the Bowels of Beasts that have died, are sufficient Proofs: But the red Vesicles with a blue Circle, that are observed within the Mouth and Nostrils, the livid Tongue, that general Loss of Strength, the slimy Matter issuing from the Nostrils, &c. are Symptoms that do not appear in a Fever merely inflammatory. Shall we allow it then to be a malignant Fever? But the Contagion attending this Distemper does not accompany a Fever barely malignant. Have those who call it a Small Pox given it a more proper Name? It seems to me, that all that has been said in favour of this Opinion * proves no more than that it is attended with a cutaneous Eruption; but it would require great Penetration to determine the Nature of the Poison by which it is produced. Besides, several Symptoms are observable in this Distemper, which do not appear in the Small Pox; such is that Species of Carbuncles which come out on divers Parts of the Animal's Body, and

* See the *Reflections of the Society of Physicians at Geneva upon the Distemper amongst the Cattle.*

produce

produce such tragical Effects.* Now in order to be satisfied whether it is actually a Plague that rages among the Cattle, as some believe it to be, it would be necessary to agree upon a just and accurate Definition of a Plague, which is a Point not yet thoroughly determined. If by Plague we understand, with M. *Gillo* and several others, a Distemper that kills almost as many as it seizes, it follows, that this Sickness among the Cattle is sometimes a real Plague, and sometimes not so, according as it is more or less violent, and carries off smaller or greater Numbers. We have seen both these Cases in *France*, where sometimes a great many infected Beasts have recover'd, and at other times almost every one has died that was attack'd by the Distemper. Should we define a Plague to be “ an epidemical contagious Distemper, occasioned by a most subtil Poison
 “ diffused through the Air, which makes
 “ its Way into our Bodies, and there produces Buboes, Carbuncles, Exanthemata, Purple Spots, and other terrible

* See the foregoing Description of the Distemper, where these Tumours are spoken of, p. 10.

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“Symptoms?”* This is not sufficient to determine the Name of the Distemper in question, since one Part of the Definition supposes what is by no means certain, *viz.* that the extremely subtil Poison, which produces the Disease, is diffused through the Air. We have already observ’d, that several Authors ascribe the Distemper to a noxious Quality in the Grass, or to an obstructed Perspiration; according to which Notions it could not be denominated a Plague, as it would not tally with the Definition thereof. Besides, the Exanthemata and Purple Spots, which are Symptoms almost inseparable from a Plague, are not manifestly observable in the Distemper among the Cattle; since many Authors look upon the Eruptions that appear on their Skin to be Pustules of the Small Pox, which are very different from Exanthemata and Purples. In fine, as all this Dispute is about nothing but a Name, the Decision whereof is of no manner of Consequence, we shall dwell no longer upon it: And in order to reconcile

* See Dr. *Allen’s Synopsis of Physick*, Vol. I.

the different Denominations, and thereby prevent the Objections that might be raised against me, if I should espouse either one Side of the Question or the other, I shall define this Distemper *a burning, pestilential, eruptive Fever*. This Definition will include all the Symptoms that have been the Occasion of giving it so many different Names.

HERE we must ingenuously acknowledge, that we are ignorant of the Cause of this terrible Distemper; and I believe there is nobody so bold as to affirm that he has a just Idea of it. All that different Writers have advanced on the Subject, is nothing more, as we have seen, than weak Conjecture. In this Point therefore let us confess our Ignorance, and by such an honest Confession we shall distinguish ourselves from those who are Fools indeed. In the Practice of Physick we ought to keep within the Bounds of our Knowledge and Senses, *naturas rerum manifestas indicare, non causas indagare dubias*. Let us observe the Nature of the Distemper; let us carefully consider its Symptoms, its Progress, its Variations and Consequences; let

let us content ourselves with diligently attending to the Course that Nature takes to get rid of the Load which oppresses her; let us follow her, Step by Step, in all her different Motions; let us make the best Use of all these various Observations, and by that means we shall be able to lay down and establish something true and certain with respect to the Distemper in question, much better than by any Hypothesis, which, how ingenious soever, would give little Satisfaction to the Understanding, and would lead us away from the Object we ought to have in View. To proceed methodically on so obscure a Subject, a geometrical Order appear'd to me the most convenient; and such I shall make use of in the following Part of this Dissertation.

PROPOSITION I.

The morbid Matter always tends to some particular Part to discharge itself.

IN almost all Distempers, especially epidemical Contagions, it is observ'd that
Nature

Nature discharges the morbid Matter either by Urine, by Sweat and insensible Perspiration, or by Stool. These three Ways may be consider'd as so many Outlets, whereby Nature usually discharges the various Sorts of Matter that mingle with the Blood, and produce all the Symptoms of the Distemper.

It is farther observed, that in epidemical Distempers of the same Kind, Nature has a particular Tendency to one of these Ways of Evacuation, as appears daily in the Practice of Physic. For Instance, the Generality of Fevers in Spring and Autumn are best carried off by inducing plentiful Sweats, sometimes by a considerable Discharge of Urine, and at other times by an Evacuation of the peccant Matter, either by Vomit or Stool, according to the Place where it is lodged in the greatest Quantity, and to the Course that Nature points out for its Discharge.

CONSEQUENCE.

FROM this Proposition we see the Reason why the same Remedies have not al-

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ways

ways the same Effect in these Distempers; why Purgatives are sometimes better than Sudorifics, and Sudorifics sometimes better than Diuretics. The morbid Matter, as we said before, particularly inclines to one of these Ways of Evacuation. When it throws itself out at the Skin, it would be in vain to administer emetic Purgatives. So far from being of Service, they would rather increase the Distemper; for the violent Irritations thereby raised in the Intestines would occasion a greater Secretion of the Humours in those Parts, which would divert the cutaneous Discharge of the morbid Matter. The Way to succeed in this Case would be, by means of some gentle Sudorific, to increase the Separation of the Humour, to strengthen the Vessels, to accelerate the Motion of the Fluids, and thereby facilitate their Discharge by the Pores of the Skin.

THE famous *Sydenham* has laid it down as a Rule, that we ought to have an Eye to the Way that Nature takes to disengage herself from her Burden, that we may be able to assist her in her Operation: And with that Candour, which real Physicians are

are generally possess'd of, he acknowledges, that whenever he did not study the Course of Nature in any Distemper, he only grop'd in the dark; and that he never could, till he had made the nicest Observations on some Diseases, give any Relief to his Patients.

PROPOSITION II.

In the Distemper among the Cattle the morbid Matter tends towards the Skin.

THOUGH we are not capable of determining positively what is the Cause of this Distemper, we conceive however, that it must be some natural Substance that produces such a Change in the Body of these Animals. But of what Nature is this Substance? Why, this is what we do not understand; nor is it of much Importance whether we do or not: It suffices we know, that whatever Alteration is made is effected by some such Substance or Body, which we shall call the *morbid Matter*, as it is the Cause of the Distemper,

and gives Rise to all its concomitant Symptoms. This being admitted, it is certain the morbid Matter, whatever it be in this Distemper, tends towards those Parts where it leaves the greatest Impressions. Now these are no where more visible than in the Skin of the Beast; and for a Proof of what I advance, we need only attend to the following Observations.

First OBSERVATION.

MOST of the Cattle attack'd with this Distemper have divers Tumours of the Nature of the Carbuncle or Anthrax, which rise upon their Legs, their Breast, and other glandulous Parts of the Skin. What proves that this Swelling of the Glands is produced by morbid Humours is, 1. That these Tumours make a very swift Progress, and are accompanied with very fatal Symptoms. 2. That if the Tumours are brought to a Suppuration, and that be kept up till the morbid Matter is thereby properly discharged, the Animal recovers; just as it happens in the *Parotides* that accompany malignant Fevers.

Second OBSERVATION.

IN dissecting several Beasts that have died of this Distemper, little Pimples have been found between the Flesh and the Skin, according to the Observation of M. *Drouin* and many others,* who assure us they have also seen them during the Time of the Distemper, while the Cattle were alive.

Third OBSERVATION.

THE greatest Part of the Beasts that have had this Distemper, and got over it, have had the whole Surface of their Body overspread with a Sort of Itch or Scab, resembling Miliary Eruptions or the Morpew.

Fourth OBSERVATION.

THE Hair of the distemper'd Cattle is very loose, and easily comes off; and it has been observ'd, that most of those that have recover'd have shed their Coat. This is occasion'd either by the Root of the Hair being op-

* See the *Journal of Verdun*, for March 1746.

press'd by the Quantity of Humours that flow to those Parts, (in which Case, being deprived of Nourishment, it becomes loose and soon falls off,) or by the Acrimony of the morbidic Humour's corroding and destroying the Bulb or Root of the Hair, and so causing it to fall off for want of Nutriment.

CONSEQUENCE.

THE Result of all these Observations is,

1. THAT the morbidic Matter tends towards the Surface of the Body, since it swells the Glands of the Breast, the Neck, and the Legs, as mention'd in the *first Observation*.

2. THAT the said Matter does not only attack the considerable Glands, but the whole Skin without Distinction; which is proved by the little Pimples that have been found between the Skin and the Flesh, according to the *second Observation*; and by that general Looseness of the Hair, which shews that all the Roots of it, interspers'd throughout the Skin, are attack'd by the Distemper.

REMARK.

R E M A R K*.

As it is plain from the preceding Observations, that Nature chuses the Way of the Skin to rid herself of the morbid Matter, all that we have to do is to assist her in her Endeavours, and to act in Concert with her, by means of such Remedies as are capable of diminishing those Obstacles she may meet with in the Course of her Operations.

P R O P O S I T I O N III.

Those Remedies which are capable of augmenting the Excretion of the cutaneous Humours, are the Remedies indicated in the Case before us.

SINCE the morbid Matter tends towards the Skin, as has been proved ac-

* Perhaps it had been more proper, in a Work wherein a geometrical Order is observ'd, to have used the Term *Scholium* instead of *Remark*, and that of *Corollary* instead of *Consequence*: But as those Words are not much in Use except amongst Mathematicians, and might spread a Veil of Obscurity over a Work intended to be of general Benefit, I thought it more convenient to substitute the Term *Remark* in the room of *Scholium*, as the Remarks will answer
 cording

according to the *second Proposition*, we ought to use our utmost Endeavours to facilitate its Discharge. Now I say, that in order to obtain this End, the Remedies that are capable of promoting the Excretion of the cutaneous Humours are indicated in the present Case; because by that means we shall not only facilitate the Discharge of the Sweat and Perspiration, (the ordinary Excretions of the Skin) but also that of the morbid Matter, which has been thrown upon the Miliary Glands, and which has likewise fill'd the Vessels of the Skin.

PROPOSITION IV.

There are two Ways of augmenting the cutaneous Discharge, either by increasing the Force of the Heart, or by diminishing the Resistance that is made to it.

In order to prove the first Part of this Proposition, *viz.* that one Way of augmenting the same Purpose, *viz.* that of illustrating the Propositions just before proved; and also the Term *Consequence* instead of *Corollary*, as it will signify the same Thing, namely, a Proposition that follows from another which has been just demonstrated.

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menting the cutaneous Excretion is by increasing the Force of the Heart, we need only consider, that Sweat and the Matter of Perspiration are discharged out of the Body by the Contraction of the Heart, whereby the Blood is push'd to the Extremity of the excretory Vessels of the Skin. Now it is certain, that the greater the contracting Force of the Heart, in so much the greater Quantity will the Fluids be carried towards it, with so much the more Strength will they be push'd back again, and consequently the Humours will be secreted in greater Abundance.

It is equally certain, that a Diminution of the Resistance made to the Motion which throws the Humours towards the Surface of the Body, is another Means of augmenting the cutaneous Excretion; for every thing that resists that Motion makes it less, and consequently prevents the Humours from being carried to the Extremity of the excretory Vessels of the Skin, and thereby discharged. From hence therefore it plainly follows, that if the Resistance be diminish'd, the Fluids will be carried to the Skin in greater Quantity,

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and the Discharge of the cutaneous Humours will be more considerable: Which was the Point to be proved.

R E M A R K.

IT is certain, that the Resistance which the Humours have to surmount in their Circulation is every where very great, both on account of the Friction they undergo against the Sides of the Vessels, and of the various Windings of those Vessels wherein they circulate.

THIS Resistance, however, is nowhere greater than in the Skin; for in reality,

1. THE Distance of the Heart from the Skin being greater than from any other Part, the weakest Opposition there is more considerable than it would be any where else, because the Humours have but little Motion there to overcome the Resistance.

2. AN Opposition is also made by the Skin itself, which in the horned Cattle is of a very compact Texture, and by the Fibres whereof it is composed, which of themselves are very hard and stiff, and are kept extended by the Hair, the Roots whereof traverse the whole Skin, and serve

as so many little Nails to keep the Fibres fast together.

3. THE Atmosphere, which continually presses upon the Surface of the Animal's Body with a Weight equal to several thousand Pounds, makes a Resistance that much retards the Motion of the Humours in those Parts, the Diminution of which Resistance must necessarily be attended with Advantage.

PROPOSITION V.

The Method of augmenting the cutaneous Excretion, by increasing the Force of the Heart, does not seem to be the best; that of diminishing the Resistance appearing much more preferable.

ALL Natural Philosophers agree, that a too slow or a too rapid Motion is equally repugnant to the Secretion of the Juices, for which Purpose a certain Degree of Motion is necessary. This Principle once establish'd, I say the cutaneous Secretion will not be augmented in the

present Case by means of Remedies that increase the Force of the Heart, as it will by lessening the Resistance; for the Humours being before in no small Agitation, and the Force of the Heart and Arteries being already very great, on account of the Fever the Cattle are in, it is certain that an Augmentation of that Force will also augment the Motion of the Humours, and thereby they will be farther rarified, so as to possess a larger Space, and distend the Vessels to such a Degree as to render them incapable of re-acting upon the Fluids, not only for the Discharge of the morbid Matter through the Skin, but even to continue their Circulation. Hence general Stagnations of the Humours, the Viscera fill'd with Blood, &c.

THESE ill Consequences are not to be fear'd from the second Method proposed. Since the Business in the present Case is not so much to put the Humours in Motion, as to remove the Obstacles that oppose their Discharge, (as we have demonstrated) it is certain a Diminution of such Resistance is a Method far more advisable. We have seen, in the Remark on the fourth

fourth Proposition, how great that Resistance is, and that it is very prejudicial to the free Discharge of the cutaneous Humours; the Diminution therefore of such Obstacles cannot fail of being extremely serviceable.

R E M A R K.

It is therefore the less surprizing, that the Cordials and Sudorifics usually given to the distemper'd Cattle, in order to throw the morbid Matter out of the Body, do not produce the expected Effects. There happens in this Case, what we have just now observed in the first Article of the fifth Proposition, *viz.* these Remedies augment the Motion of the Humours, and rarify them so much that they distend the Vessels to such a Degree, as to be no longer capable of re-acting upon the Fluids: Then the Circulation of the Humours ceases, the Blood stagnates, the over-distended Vessels burst; and hence those internal Inflammations, those extravasated Humours, those gangrened Viscera, that we find upon opening their dead Carcases.

C O N.

CONSEQUENCE.

FROM what we have demonstrated in the foregoing Propositions, it follows, that the chief Obstacle which hinders the free Discharge of the morbid Matter through the Skin, (in the Horned Cattle) is the compact Texture of that Part, and the Tension and Hardness of the Fibres of which it is composed. *See the second Article of the Remark on the fourth Proposition.*

TO the principal Obstacle we have added another, *viz.* the Pressure of the Atmosphere upon the Body of the Animal, which we have said is equal to a Weight of several thousand Pounds; and this we shall demonstrate in the following Proposition.

PROPOSITION VI.

To determine the Weight that an Ox, or any Beast of the same Bulk, sustains by the Pressure of the Atmosphere, when the Mercury



cury is at twenty-seven Inches and a half, the ordinary Height to which it rises in the Barometer.

THAT the Air gravitates, is a Truth establish'd by numerous Experiments; and consequently it presses upon all Bodies that are under it: A Proposition no less true than the first, but which requires to be fully explained.

THE Weight sustain'd by these Animals is equal to a Prism * of Air, whose Base is equal to the Superficies of their Bodies. Now a Prism of Air of the Height of the Atmosphere is equal to a Prism of Mercury of the same Base,† and twenty-seven Inches and a half high; so that each Foot

* A Prism is a Body of an equal Bigness from one End to the other, and whose opposite Bases are perfectly equal.

† It is known that the usual Height to which the Mercury rises in the Barometer is twenty-seven Inches and a half. This Elevation is occasion'd by the Weight of the Air, with which the Mercury at that Height is *in Equilibrio*. Now, as Bodies in that State are of an equal Weight, it follows, that the Column of Air which gravitates upon the Mercury is equal¹⁰²⁹ to the Mass of Mercury which it causes to ascend⁸²⁸.

square

square of the Superficies of their Bodies is press'd by a Weight of Air equal to a Mass of Mercury whose Base is one Foot square, and whose Height is twenty-seven Inches and a half. The Weight of a Foot square of Mercury then being 1064 Pounds *, it follows, that each Foot square of the Superficies of an Ox or other Beast is press'd upon by a Weight of Air equal to $2438\frac{1}{3}$ lb. and one Third; for a Mass of Mercury whose Base is one Foot square, and twenty-seven Inches and a half high, contains two cubical Feet $\frac{1}{4} + \frac{1}{24}$ of Mercury, which are equal to $2438\frac{1}{3}$ lb. † the Weight sustain'd by every Foot square of the Surface of the Animal: And as the Superficies of an Ox contains 35 square Feet, (as I myself have measured it) in order to know the whole Weight the Beast sustains, we have only to multiply $2438\frac{1}{3}$ lb. by 35, and the Product will be 85342 lb. || which

* Water being to Mercury as 1 to 14, and the Weight of a cubic Foot of Water being found by the Experiments of *Galtillié* to be 76 Pounds, I have the following Proportion, 1 : 14 :: 76 : 1064.

† $1064 \times 2\frac{1}{4} + \times \frac{1}{24} = 2438\frac{1}{3}$ lb.

|| According to accurate Computation, $2438\frac{1}{3}$ lb. $\times$ 35 = 85341 $\frac{2}{3}$ lb.; but as 85341 $\frac{2}{3}$ lb. is nearer to

is

is the Weight sustain'd by an Animal whose Superficies is 35 Feet square, when the Mercury is at twenty-seven Inches and a half: Which was to be demonstrated.

CONSEQUENCE I.

By this Demonstration it appears, what an enormous Weight these Animals sustain; and this Weight will be so much the greater, as their Surface is of greater Extent. A Man, whose Superficies is only fifteen square Feet, according to the Observation of *Nieuwentit*, will sustain a Weight much less considerable; for instead of multiplying $2438\frac{1}{3}$ lb. by 35, the Surface of an Ox, we are to multiply the same Number by 15, which will only produce 36575 lb. the Weight sustain'd by the Body of a Man when the Mercury is at twenty-seven Inches and a half; and yet this is a much greater Weight than People are apt to imagine.

85342 lb. than to 85341 lb. I have not regarded the Fraction, which is of little Signification, and for the sake of a round Sum have added the Third that was wanting to make up a whole Number.

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CONSEQUENCE II.

THE Weight which the Body of these Animals sustains is likewise different according to the different Height of the Mercury; for, as we have shewn in the sixth Proposition, the Weight which a Beast sustains by the Pressure of the Atmosphere is equal to a Prism of Mercury, the Base whereof is equal to the Superficies of his Body, and the Height twenty-seven or twenty-eight Inches, which is its ordinary Variation *: And it is certain the Prism

* Though the Variation of the Mercury in the Barometer is seldom more than an Inch, viz. from 27 to 28; yet M. *Poliniere* has observ'd it sometimes fall to 26 Inches $\frac{1}{4}$, and sometimes rise to 27 Inches $\frac{3}{4}$; and that the Difference between its least and greatest Height was about two Inches. (See his *Philosophical Experiments*.) From whence it follows, that the Body of a Man, who undergoes these Variations of the Atmosphere, supports sometimes a Weight of 2660lb. more than at other times, according as the Mercury is at its greatest or its least Elevation.

The Variation of the Mercury (and consequently that of the Air which causes it) is much more considerable in *England*; for Dr. *Wainwright* and Dr. *Quinsey* observe, that the Difference between the least and the greatest Height of the Mercury is three Inches, viz. from 27 to 30. From whence they conclude, according to their Calculation, that a Man's Body suf-

of

of Mercury will weigh less when its Base is the same and its Height only twenty-seven Inches, than when it is twenty-eight. Now this Variation makes a very considerable Difference in the Weight which the Cattle sustain at different Times; for a Beast, whose Superficies is thirty-five square Feet, sustains a Weight of Air equal to 83790 lb. when the Mercury is at twenty-seven Inches, and to 86894 lb. when it rises to twenty-eight; so that they sometimes sustain 3104 lb. more, and sometimes so much less, according as the Mercury is at twenty-seven or twenty-eight Inches.

CONSEQUENCE III.

IF the Weight sustain'd by the Cattle be greater or less, according as the Air is

sustains a Weight of 3982 lb. more at one Time than at another, according as the Mercury is at 27 Inches, its least Elevation, or at 30, its greatest. The Effects of such a vast Alteration must needs be sensibly felt by the human Body; the Truth of which Assertion will always be warranted by those who are troubled with an Asthma or any Disorder of the Breast or Lungs, by Persons of a plethoric Habit, and by those who are subject to Rheumatic or Sciatic Pains.

more or less heavy, one Means of relieving them from the Burden they support is to diminish the Pressure of the Atmosphere; so that all our curative Indications are reduced to these two Things:

1. To relax and soften the Fibres of the Skin, which are strongly and closely interwoven together.

2. To disburden the Animal of Part of the enormous Weight of the Atmosphere.

IN order to answer the first of these Indications, nothing appears to me more proper than to put the Animal into a Sort of Bagnio, which may be thus contrived. Let a Hole or Pit be dug in the Ground, three Feet in Breadth, five in Length, and two in Depth; in which let there be placed three large earthen Pans, of about eighteen Inches Diameter, each upon an Iron Trevet. On the Outside let three Openings be made, one answering to each Trevet, through which Fuel may be convey'd as there is Occasion, and the Air admitted into the Pit to keep the Fire alive. The three Pans are to be fill'd with Water, and a Fire of Coals or Wood to be lighted under them, by means of the Openings above-

above-mention'd. Let the Pit be cover'd with a wooden Grate or Lattice, and over that let a Hut or Hovel be erected, six Feet in Length, and four in Breadth. This Hut must have a Back-door, to be open'd and shut at pleasure, through which the Beast is to enter; and another Door at the opposite End to go out at. A Hole must likewise be contrived at the same End for the Beast to put out his Head, that he may breathe the open Air, and not the hot and moist Air within the Hut. Every thing being thus prepared, let the distemper'd Beast be turn'd into the Hut at the Back-door; and his Head being put out at the Hole contrived for that Purpose, let him be fasten'd by the Horns in the most convenient Manner for keeping him in the same Situation; after which let great Care be taken to stop up with Blankets every Hole that might give Admission to the external Air. In this Situation let the Beast remain two Hours, or longer if there be Occasion; always taking care to feed the Fire, and keep the Water boiling. At the Expiration of that Time let him be cover'd with Blankets well warm'd, and

and led back to his Stall; and after the Operation it will be requisite to give him half an Ounce of Orvietan or *Venice* Treacle in a Pint of old Wine, in order to repair in some measure the Loss of Strength and Spirits he has suffer'd by Sweating, that so Nature may have Vigour enough to throw off the morbid Matter through the Pores of the Skin, which have been thus dilated.

ADVANTAGES *arising from this* HOVEL.

HAVING proved in the fifth Proposition, that the best Method of facilitating the cutaneous Excretion is to diminish the Resistance of the Skin, either by relaxing the Fibres, or softening the Parts that are too hard; let us see whether these Ends are answer'd by means of this new Bagno, and whether we can draw from it the Advantages proposed.

THE Beast, in the Situation we have placed him, may be consider'd as in a Bath of Vapours; for the Water continually evaporating by the Heat of the Fire, will diffuse itself through the ambient

bient Air in the Hovel, and the Vapours will render it warm and moist. By this Warmth and Humidity the Fibres of the Skin, which were hard and stiff, will be suppled and relax'd, and will make less Resistance to the Humours, which will therefore circulate more freely in those Parts: Besides this, the Pores, or (if you chuse to call them so) the excretory Vessels of the Skin, will be dilated by the Heat; the Humours will have a freer Exit through them; and the morbid Matter, which is of too gross a Nature to pass through Orifices of so small a Diameter, finding the Passages widen'd, will discharge itself with greater Ease.

THE second curative Indication will be answer'd by the Use of Cupping-Glasses. We know that by their means the Weight of the Air is diminish'd, either by pumping out the Air contain'd in the Vessel by a Syringe, or rarifying it by burning Tow, &c. within its Cavity. They are to be applied either *dry* or *wet*, according as may be found necessary; that is, sometimes with and sometimes without Scarification. Besides, they will be very requisite

quisite to be applied where any of the Tumours appear that make such a rapid Progress, in order to cause a quicker Discharge of the morbid Matter, which is there lodged in greater Abundance than in other Parts: And it is proper to apply them to several Parts of the Body indiscriminately, to facilitate the more immediate Evacuation of the said Matter. But in what Manner soever they are applied, let as many be put on as possible, because the more they are in Number, the more will the Weight be diminish'd which the Beasts sustain by the Pressure of the Atmosphere. We are now to shew what Benefit the Cattle will reap from the Application of Cupping-Glasses, after having first described the Way of applying them, and their Manner of Operation.

TAKE a Cupping-Glass of a proper Size, and chuse such a Place to apply it, as that every Part of the Edge of the Glass may touch the Skin of the Beast, so that the exterior Air can have no Communication with that inclosed in the Cavity of the Vessel. Then fill the Cupping-Glass half full of Tow, and set it
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on fire, and while the Tow is burning apply the Vessel to the Part intended. The Flame being then extinguish'd, the Skin underneath the Glass is swell'd up by the Flux of the Humours to that Part; and this is what we call *dry* Cupping. If the *wet* Sort is required, after the Cupping is perform'd as above, the tumefied Skin is to be scarified, and the Cupping-Glass re-applied to the Part, proceeding in the Manner we have just directed.

THE Design of Cupping is to diminish, as we said before, the Pressure of the Atmosphere upon the Body of the Animal, and to occasion a greater Resort of Humours to those Parts. Now this Effect is really produced by the said Operation; for by burning Tow in the Cupping-Glass the Air contain'd therein is rarefied, and being closely shut up by the Application of the Vessel to the Skin, the Flame is immediately extinguish'd, and consequently the Rarefaction it occasion'd ceases. The external Air then cooling the Surface of the Vessel, the inclosed Air is condensed and reduced to a less Space, whereby it loses some of its Strength and

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Elasticity, and being no longer of an equal Density with the external Air, it presses with less Force upon the subjacent Parts; and the neighbouring Parts sustaining a greater Pressure from the external Air, the Humours flow to the Place where they find the least Resistance, and raise up the Skin underneath the Cupping-Glass, so that the morbid Matter will be there discharged, and the Animal thereby relieved.

Now to determine precisely how much the Weight of Air sustain'd by the Cattle will be diminish'd by the Operation of Cupping, I have made the following Experiment.

EXPERIMENT.

HAVING burnt some Tow in a Pot of eight Inches Diameter, and six Inches deep, of a pyramidal Shape, somewhat resembling that of a Cupping-Glass, I put my Barometer through a Hole I had made in the Bottom of the Pot*, in order to take in

* It is to be observ'd, that the Pot was turn'd upside-down, and consequently the Bottom of it was uppermost.

some

some of the Air inclosed in this Kind of *Cucurbitula*, having closely stopp'd every Passage that might admit the external Air into the Vessel. In this Situation I left the Barometer a sufficient Time to fill itself with the warm Air inclosed; after which I closed up as quick as possible the little Branch of the Barometer, and remov'd it into the open Air. The Consequence was, that the Air contain'd in the Barometer being no longer dilated by the Heat of the Tow burnt in the Vessel, was now condensed by the ambient Air, its Spring and Expansion lessen'd, and the Mercury thereby forced to descend two Inches and a half, so that it stood no higher than twenty-five Inches above its Level.

R E M A R K.

THE Effects in this Experiment are the same as in the Use of the Cupping-Glass; for, 1. The Air that was contain'd in the Barometer underwent the same Degree of Rarefaction as that inclosed in the Cupping-Glass, since it was with the same

Sort of Air that the Barometer was fill'd.
 2. Whatever Effect the external Air had upon that in the Barometer, the same it has equally upon the Air inclosed in the Cupping-Glass; so that the Air of the Cupping-Glass and that of the Barometer are of an equal Density. And as it appears from the Experiment aforesaid, that the Air contain'd in the Barometer caused the Mercury to ascend no higher than to twenty-five Inches, we must thence conclude that the Air inclosed in the Cupping-Glass is only of such a Density as to raise the Mercury to the same Height, or scarce so high; since it is not possible, let the Experiment be made with ever so much Accuracy, to prevent the Communication of the external Air with that in the Barometer, at least for some Moments; which is a Thing that does not happen to the Air inclosed in the Cupping-Glass.

CONSEQUENCE I.

How much then will the Weight sustain'd by the Animal be diminish'd? This
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we shall determine in the following Manner. We have proved, (*Proposition VI.*) that when the Mercury stands at twenty-seven Inches and a half, each square Foot of the Superficies of the Body is press'd upon by a Weight of Air equal to $2438\frac{1}{3}$ lb. When the Mercury therefore is at twenty-five Inches, each Foot square will only sustain a Weight of Air equal to $2216\frac{2}{3}$ lb. For, as we have seen in the second *Consequence* of the sixth *Proposition*, the Weight sustain'd by the Cattle varies according to the different Elevation of the Mercury; because the Weight that presses upon each square Foot is equal to a Prism of Mercury of the same Base, and of the same Height to which the Mercury ascends in the Atmosphere incumbent upon the Bodies of those Animals. (See *Proposition VI.*) Consequently, each square Foot of the Superficies of a Beast will at that Time sustain no more than $2216\frac{2}{3}$ lb. which being subtracted from $2438\frac{1}{3}$ lb. the ordinary Weight sustain'd by each Foot square, there will remain $221\frac{2}{3}$ lb. of which Weight each square Foot of the
 Animal

Animal will be disburden'd by Cupping. Now if we suppose that all the Cupping-Glasses applied to the Body of a Beast cover only six square Feet out of thirty-five, which the Superficies contains, the Animal will by this means be discharged of 1330lb. But if the Mercury should descend lower than twenty-five Inches, it is evident the Beast would be freed from a Weight still more considerable; which I think I have made appear towards the End of the foregoing Remark.

CONSEQUENCE II.

SOME Parts of the Animal's Body being relieved from so great a Pressure, the Humours will flow thither more copiously, because the Vessels of those Parts will be less compress'd than they were before; every Column of Air being diminish'd will gravitate less upon the Orifices of the excretory Vessels; the Fluids therein contain'd will have less Resistance to surmount in the Way of their Discharge; and the morbid Matter will therefore be more easily

easily evacuated. All these good Effects may be produced by Cupping without Scarification; but the other Method will be still more advantageous, as it operates by pumping out (as one may say) the morbid Matter contain'd in the Vessels of the Skin, according to the Laws of Suction; and the Benefits attending it will be nearly the same as those that ensue from sucking a Wound.*

ACCORDING to the Principles laid down in this Dissertation, it will be easy to understand whether the different Remedies made use of in the present Distemper among the Cattle can be attended with Success; such as Frictions, Fumigations, Cathartics, Bleeding, Sudorifics and Cordials, Setons and Caustics.

THAT we may be able to determine these Points, it is necessary to remember what we have proved in the Course of this Dissertation, *viz.* that the Cause of this Distemper is a certain peccant Matter, which, being mix'd with the Humours,

* This is what the common People in *France* call *panser du secret*.

produces

produces the Symptoms we observe, and which Nature endeavours to discharge by the Pores of the Skin. From this Principle flow the following Consequences.

CONSEQUENCE I.

FRICTIONS are excellent in the present Case, but not those with Straw dipp'd in Oil, which some recommend: 1. Because the Oil, by stuffing up the Pores of the Skin, will rather obstruct than promote the cutaneous Excretion. 2. Because the Straw is not a Body strong enough to cleanse the Skin thoroughly from the Filth that may be gather'd upon it, and which, by stopping the Orifices of the excretory Vessels, may prevent the free Discharge of the morbid Matter.

To answer the curative Indications in this Distemper, I would advise the Use of a Curry-comb; for such Frictions would not only cleanse the Skin, but by continuing them for some Time, or by making them somewhat harder than usual, a slight Inflammation would be raised upon the
Skin,

Skin, which would cause the Humours to resort thither more copiously, and there form a Sort of general Defluxion. This is a Method of curing many Distempers, which was much used by the Ancients, and that with Success: They did a little Evil, to obtain a great Good; and one cannot help blaming the Moderns for not following their Example. Frictions then, of consequence, not only may but ought to be employ'd; and that, in my Opinion, previously to sweating the Animal in the Bagno above described.

CONSEQUENCE II.

FUMIGATIONS with strong Herbs would also be of some Service, by burning them in the Pans that are used to boil the Water, as the oily and aqueous Particles evaporated from them would relax the Fibres of the Skin*. But, besides

* The Reader will understand that I mean these Herbs should be green; for otherwise, if they are burnt when dried, so far from softening the Skin, it will be made more dry and hard, which is the Case of all Bodies that are exposed to the Smoak of a common Fire.

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that

that the aqueous Particles hence arising will not be so numerous as they are in the Vapour of the boiling Water, and consequently have a less Effect, the aromatic Particles evaporated from the Herbs being of a sharp Nature may irritate the Orifices of the excretory Vessels of the Skin, and cause them to contract, and thereby obstruct the Discharge of the morbid Matter; which not being to be apprehended from the Vapours of the boiling Water, this Method must be allowed the Preference.

CONSEQUENCE III.

THE Bleeding made use of at the Beginning of this Distemper may also have its Advantage, by discharging some of the peccant Matter that infects the Mass of Blood; provided it be practised with such Discretion as to leave Nature sufficient Strength to throw off the Load that oppresses her.

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CONSEQUENCE IV.

As Cathartics excite a Discharge of the morbidic Humour by other Passages than Nature prepares and points out, they must be look'd upon as prejudicial, because they act in a Way contrary to that of Nature, to assist whose Operation ought to be our principal Care in any Distemper.

CONSEQUENCE V.

SUDORIFICS and Cordials ought not to be used but with the greatest Caution. We have seen, in the fifth *Proposition*, what Mischiefs they are capable of producing in the present Case. It is supposed indeed that they must be serviceable, as they operate by throwing the Humours towards the Skin; but as they meet with a Resistance in that Part too great for them to surmount, on account of the Hardness and Thickness of the Skin, they only serve to agitate the morbidic Humour, without producing any good Effect: So

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that

that if they were to be used at all, it would be when the distemper'd Beast is in the Bagnio, the Resistance that obstructs their Operation being then diminish'd.

CONSEQUENCE VI.

THE Vesicatories, Caustics, Setons, and Scarifications employ'd in this Distemper, are excellent Remedies, from whence great Advantages may be drawn. We thereby act in the Way of Nature, and by several Means assist her in her Operations. She herself has thrown the morbid Matter to the exterior Parts of the Animal, (See the *second Observation*) the Hardness of the Skin prevents her from pushing it farther, and she is not able to overcome this Opposition; by one of these Methods then we open her a free Passage, through which she may discharge the Humour that infected the Mass of Blood.

SUCH are the Remedies, in my Opinion, the most proper to attain the End we have had so long in View. Happy should

should I think myself, if my Labours should be attended with the desired Success. I hope, however, that though the Effects may not be answerable to the Expectations I have conceiv'd, my Endeavours will be nevertheless kindly accepted; for if I have not hit upon the Truth in every Respect, what I have done may perhaps make it the easier to be found by others; in which Case I shall freely give up the Honour of the Discovery to the Service of the Publick, extremely happy in having contributed thereto, though ever so little.

Nota Bene.

MY Proposal of a Hut or Hovel has appear'd to many People very difficult to be put in Execution, as well on account of its Structure, as of the Expence wherewith they suppose the erecting it would be attended.

IN order to remove these imaginary Difficulties, I have, with the Assistance of
proper

proper Workmen, made a Computation of the Expence this Project would require, and find that it would not exceed forty or fifty Shillings Sterling. Now as the laying out so small a Sum would serve a whole Town or Village, this is the cheapest Method yet found out of relieving the distemper'd Cattle; for scarce one of them hitherto but what has cost a Pistole at least before its Death, in *Venice Treacle*, Universal Powder, and other Drugs.

THERE is no Necessity for every private Man to build such a Hovel; for if that were the Case, but few Persons would be able to come at the Remedy. It is sufficient that one be erected in every Village at a publick Expence, which will be but a Trifle for each Individual. This would serve as a Common Bagnio, to which every Inhabitant might bring his distemper'd Beasts, and, after they had stay'd in it a requisite Time, drive them back again to their Stalls, taking care to cover them well with Blankets, in order to keep up their Perspiration. However, if the House where the Cattle are kept be at any considerable
Distance.

Distance from this Hovel, the safest Way will be to remove it to the Place where it is wanted. This may be done by placing it on two Axle-trees, each furnish'd with two Wheels, by which means it may be drawn to any Place, as there may be Occasion; and the Trevets, Pans, and Grate being brought along with it, nothing remains to be done but to dig a Pit, and to fix the Hovel over it. Thus the Structure propos'd will not only serve one Village, but several, as it may be carried to every Place in the Neighbourhood.

THE Cupping-Glasses, of which we have shewn the Advantage, are still less cumbersome and less expensive: So that the Remedies we propose are so far from being morally impracticable, as some Persons have thought fit to insinuate, that, on the contrary, no Scheme has yet been offer'd so easy and advantageous, either with respect to the Execution, or the small Expence it requires.

F I N I S.